

# **The Automated Commercial Environment**



## **Business Plan**

Prepared by  
**U. S. CUSTOMS SERVICE**

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<p><b>TABLE OF CONTENTS</b></p>
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## **Table of Contents**

<b>1.</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>2.</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>3.</b>	<b>BUSINESS DRIVERS .....</b>	<b>7</b>
<b>4.</b>	<b>AUTOMATION OPTIONS.....</b>	<b>11</b>
<b>5.</b>	<b>ACE STATEMENT OF BENEFITS .....</b>	<b>15</b>
<b>6.</b>	<b>ACE TECHNICAL APPROACH.....</b>	<b>18</b>
<b>7.</b>	<b>IMPLEMENTATION AND DEPLOYMENT.....</b>	<b>22</b>
<b>8.</b>	<b>COST .....</b>	<b>33</b>
<b>9.</b>	<b>VALIDATIONS.....</b>	<b>36</b>
<b>10.</b>	<b>PROJECT ADMINISTRATION .....</b>	<b>39</b>
<b>11.</b>	<b>STAKEHOLDER INVOLVEMENT .....</b>	<b>44</b>
<b>12.</b>	<b>CONCLUSIONS.....</b>	<b>47</b>
<b>13.</b>	<b>GLOSSARY.....</b>	<b>49</b>
<b>14.</b>	<b>SUPPLEMENTAL INFORMATION .....</b>	<b>59</b>



## **1. INTRODUCTION**



The objective of this document is to provide a baseline of information on the Customs Automated Commercial Environment (ACE) program. Customs will supplement this document with additional information as necessary. This is a living document that will be periodically revised as information becomes available, as policy and technical decisions are made, as ACE development progresses, and as other environmental factors influence the need for revision.

The information presented assumes that Customs will have available a sufficient, reliable, and consistent source of funding for ACE development. Failure to realize this assumption will significantly affect ACE development, implementation and deployment.

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## **2. EXECUTIVE SUMMARY**



The Automated Commercial Environment (ACE) is the information technology (IT) system the United States Customs Service is developing to process goods and merchandise imported into the United States. Its objective and focus is to provide an integrated automated information system to efficiently collect, process, and analyze commercial data; and meet the current and future needs of Customs and the trade community. The overall goal of ACE is to implement the necessary automation support for the redesigned Trade Compliance process.

## **Business Drivers**

**Page 7**

The explosive growth in trade, the age and stability of the existing computer system, high visibility trade programs, system and government mandates emphasizing operational performance are factors influencing the need for Customs to redesign its core trade compliance business methodologies. Both Customs and the trade community were eager to identify opportunities for lowering business-processing costs and improve customer service. These factors were reflected in the passage of the Customs Modernization and Informed Compliance Act (Mod Act), a key piece of legislation enabling and mandating business improvements that emphasize compliance, facilitation and customer service. While the Mod Act provided the legal foundation for redesign, one other critical component was necessary to enable full implementation—a modern automation system.

## **Automation Options**

**Page 11**

Customs explored two avenues in an effort to leverage cost effectiveness and business process support. After reviewing the delivery of business functionality, technical considerations, and cost, Customs determined it was more cost effective and advantageous to build a new system.

## **ACE Statement of Benefits**

**Page 15**

ACE will incorporate features to streamline processing, unify Customs procedures, and enhance account-based management. These features allow for lower-cost processing, improved customer service, support for business needs of external and internal users, and result in a more responsive Customs Service. The following are examples of trade and Customs benefits:

**Remote Location Filing**  
**Account Management**  
**Periodic Payment**

**Reconciliation**  
**Electronic Protest**  
**National Statement**

**National Permit**  
**Just-In-Time-Filing**

## **ACE Technical Approach**

**Page 18**

ACE is a hybrid of the current mainframe architecture and a distributed computing environment which employs client/server technologies and uses private networks and secure web-enabled technologies. Transaction-intensive processing will run on an IBM mainframe, which can support high-volume, up-to-the-second, repetitive processing. Analytical processing will be performed on distributed servers using data that is readily accessible to appropriate users through modern relational databases.



## **Implementation and Deployment**

**Page 22**

The capabilities of ACE are represented by 17 functional groups. This ordering and the roll-out of functionality to the ports is determined through a series of analytical exercises: sequencing, sizing and scheduling, and location deployment. Customs employs specific methodologies to conduct each of these exercises. Each functional group, or combination of groups, is first placed in a development sequence. Functionality deployment occurs in a series of operational releases whose dates are determined at the conclusion of a sizing and scheduling exercise. Once the results of the sequencing, sizing and scheduling exercises are known, Customs develops a plan to phase ACE deployment at port locations.

## **Cost\***

**Page 33**

The total cost of ACE reflects recurring and non-recurring expenditures for application development and infrastructure improvement. Such complex and extensive change is expensive and challenging. However, deploying ACE in a series of incremental steps allows Customs to apportion the cost over time and gives external stakeholders sufficient lead time to conduct corresponding investment planning. *\*A new ACE costing exercise is underway at this time and the results were not available by the time this document was finalized. The results of the new costing exercise will be released with the next version of the ACE Business Plan.*

## **Validations**

**Page 36**

Customs decision to replace ACS and its aging enterprise architecture with a new automation approach has been validated by assessments conducted by independent consultants. Expert consultations or analyses were provided by Cambridge Technology Partners, Klynveld Peat Marwick Goerdeler (KPMG), the Chief Information Officer's Private Sector Council, and the GartnerGroup.

## **Project Administration**

**Page 39**

Oversight structure is provided by the following: Treasury, the Customs Executive Improvement Team, the Customs Investment Review Board, the Trade Compliance Process Owner, and the Trade Compliance Board of Directors. The key development team structure includes the Executive Director, the Project Planning Group, and the Redesign Project Staff. The Redesign Project Staff consists of three groups: the Process Analysis and Requirements Team, the Technical Team, and the Trade and Field Support Team.

## **Stakeholder Involvement**

**Page 44**

To ensure full participation in the Trade Compliance Redesign effort Customs has developed an extensive outreach strategy to involve the trade community, internal users, and other government agencies in the ACE development process. The primary vehicles for communication with stakeholders are the Trade Support Network and the Field Support Network.

## **Conclusions**

**Page 47**





Trade growth, legislation, and the desire to use more effective business processes underscores the need for Customs to reinvent its automation processes to meet today's demands. To effect this change Customs made the decision to build a system to replace ACS and deploy it at all Customs locations. Studies by independent consultants validated the methodologies used to evaluate the need for change and how that change should take place. Leveraging automation technologies gives Customs the flexibility to combine existing mainframe components with new client/server environments. Automation design efforts focused on supporting external and internal business requirements. Customs has sequenced the design to have core functionality available early in the development lifecycle and apportion the cost accordingly to reap maximum business benefit for both Customs and the trade community. The versatility of design and implementation employed by Customs coupled with the willingness and responsiveness of the trade to support ACE will lead to the development of a successful product for both parties.

## **Glossary**

**Page 49**

A glossary of terms, including abbreviated definitions, and acronyms unique to the U.S. Customs Service is provided for convenience

## **Supplemental Information**

**Page 59**

The following documents provide additional information about the ACE program:

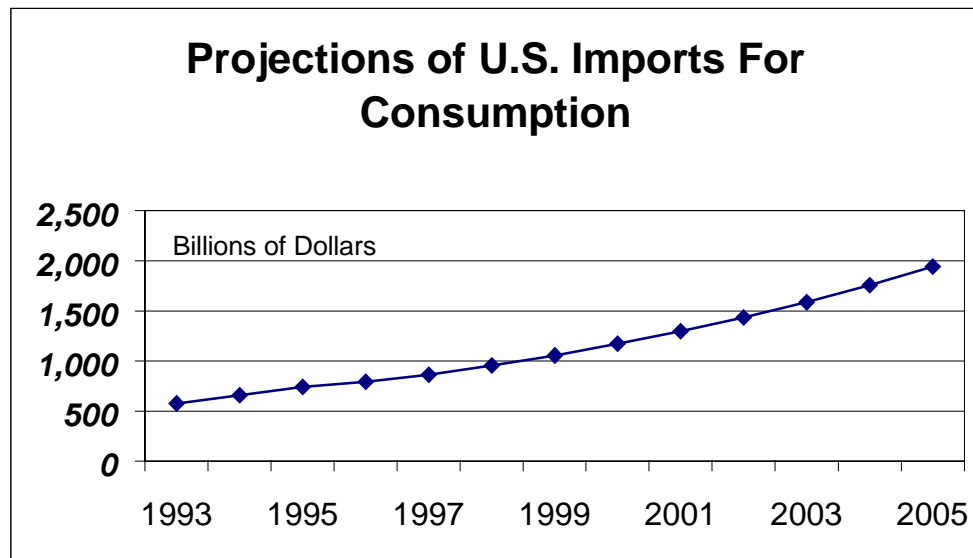
1. *ACE Technical Architecture*
2. *Enterprise Information Technology Strategy* (superseded, by item 3)
3. *Enterprise Information System Architecture* (under development)
4. *An Assessment of the Automated Commercial System (ACS)*



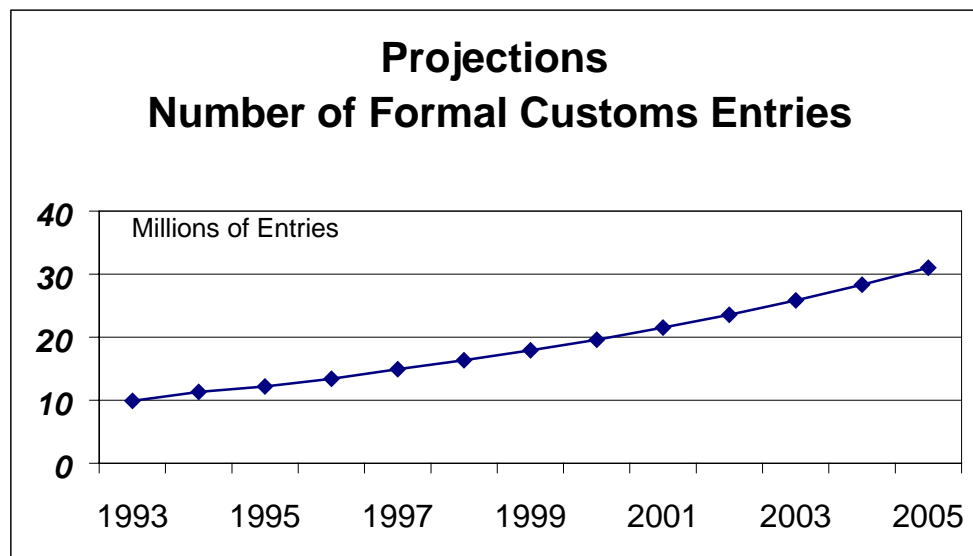
### **3. BUSINESS DRIVERS**



The expansion in trade, high visibility commercial programs, and government mandates stressing operational performance influenced Customs' need to redesign its core trade compliance business methodologies. Both Customs and the trade community were eager to find opportunities for lowering business-processing expenses and improve customer service. With the value of trade currently projected to grow at a rate of 10% every year, and the number of formal entries increasing at 9.6% per year, the greatest opportunity for achieving these two goals centers around business process improvements that impact the ability of Customs and the trade to manage and leverage both time and information.



Source: Projections based on Official U.S. Census Statistical Data  
10% Rate of Growth / Current Dollars





Source: IM115 Files  
9.6% Rate of Growth



The trade community needs to employ effective time and information management strategies to stay competitive in the increasingly global economy. To facilitate and effectively enforce the flow of goods, services, and people across U.S. borders, Customs also needs to employ time and information management strategies. Together, the trade and Customs have identified and redesigned essential business processes where efficiencies in time and information management could be realized. Many of the business process improvements reflect an overall philosophical and operational shift from port/transaction-based workflows to national/account-based processing. Changes in data management practices, increased use of paperless processing, an emphasis on national uniformity, and streamlined, flexible cargo release processes are logical outgrowths of this transition. Successful implementation of this effort will translate into processing cost savings and future cost avoidance.

Features of the redesign effort were reflected in the passage of the Customs Modernization and Informed Compliance Act (Mod Act), a key piece of legislation enabling and mandating business improvements grounded in the concepts of informed compliance, shared responsibility and reasonable care. While the Mod Act provided the legal foundation for a redesign approach that allows Customs and the trade to take advantage of time and information management strategies, one other critical component is necessary to enable full implementation—a modern automation system. Without automation support, implementation of the new streamlined business processes and the cost savings to be derived from them, would remain largely unrealized.

After examining a number of options, ranging from basic maintenance and enhancement of the existing system (the Automated Commercial System [ACS]) to building an entirely new one, Customs determined that developing a new automation system would be the most advantageous and cost effective solution in achieving full implementation of the redesigned business processes. The following table displays some of the business needs identified during the Trade Compliance redesign effort and the automated functionality required to meet those needs.

<u>Business Needs</u>	<u>Functional Solutions</u>
The trade needs an expedited release requiring fewer data elements and real-time shipment status information for "Just-In-Time" inventory processing. Where possible Customs wants to facilitate compliant trade through advance risk assessment and a corresponding reduction in data elements.	 <ul style="list-style-type: none"><li>• Track 4 Processing</li><li>• Pre-arrival quota</li><li>• Provide real-time cargo/entry status updates</li></ul>
The trade and Customs share the need to streamline information flows, such as those governing payment, quota, specialized entry (i.e. courier, warehouse, FTZ), and cargo release processes.	 <ul style="list-style-type: none"><li>• Reduce redundant data collection</li><li>• Increase electronic processing</li><li>• Periodic account payments</li></ul>



The trade and Customs need the electronic ability to file data with Customs from any place in the United States, regardless of where the merchandise arrives or is examined. This allows both parties to make efficient use of personnel by channeling work to appropriately staffed locations.



- National Permit
- Remote Location Filing
- Workload Management

The trade needs access to account level performance data to assist with meeting reasonable care requirements, and Customs with meeting informed compliance responsibilities.



Account-based data services

Customs needs the trade to provide accurate data and the trade needs time to provide accurate data. Additionally, the trade needs a process for aggregating numerous transmissions of repetitive issues into one submission, whereas, Customs needs a process to apply a correction once rather than on a transaction by transaction basis.



Reconciliation

The Automated Commercial Environment (ACE) is the new, modern information technology system the United States Customs Service is developing to process imported goods and merchandise into the United States.

An additional variable in this equation is the failing health of ACS coupled with a not yet available ACE. The result is the absence of a dependable mechanism that can be relied on to process goods entering the country. With Customs' import processing workload expected to double to more than 30 million entries by 2005, the 15-year-old Automated Commercial System is simply not up to the task. In addition, it cannot support the automation features in the Mod Act, nor can it be modified to provide on-line data and commercial processing on the Internet.

Without modern and dependable technology to manage our import data, we are at risk of a systems failure with the potential to cause a commercial traffic jam when automated data processing is temporarily suspended as we return to manually processing paper documents.



## **4. AUTOMATION OPTIONS**



To meet its goal of implementing Trade Compliance redesign features, Customs focused on two alternatives: enhance ACS or develop a new automation system. The chart below outlines Customs considerations.

*Snapshot Evaluation*

Option	Advantages	Disadvantages
<b>ACS Enhancement Option</b>	<p><b>Business</b></p> <ul style="list-style-type: none"><li>• High trade participation and familiarity</li><li>• Some Mod Act provisions supported in ACS such as; remote location filing, drawback, and reconciliation.</li><li>• Low training costs for Customs and trade</li></ul> <p><b>Technical</b></p> <ul style="list-style-type: none"><li>• Current system is fully developed and deployed</li><li>• Potential for faster deployment than ACE</li><li>• Basic hardware infrastructure is already in place</li><li>• Good corporate knowledge of system functionality exists among development staff and trade users.</li></ul>	<p><b>Business</b></p> <ul style="list-style-type: none"><li>• Questionable if full compliance with legislative requirements would be reached</li><li>• Developed around old business practices</li><li>• Redundant keying of data will be required because existing database modules are not linked, which increases potential non-compliance and prevents potential cost efficiencies</li><li>• Does not fully support transition from transaction based to account based processing</li><li>• Continued port uniformity issues</li><li>• Inability to provide better status and management reports to the trade</li><li>• Business processes that are currently manual (paper) would remain manual resulting in lost cost saving opportunities</li></ul> <p><b>Technical</b></p> <ul style="list-style-type: none"><li>• Requires difficult and expensive survival maintenance; i.e. aging technology and increasingly unavailable technical expertise to support it</li><li>• Technical structure makes it difficult and expensive to implement improvements / enhancements</li><li>• Continued expansion of functionality endangers operating capability and increases system capacity failure risk</li><li>• ACS not sufficiently documented for such extensive modification, and would require additional time and funds to complete documentation process</li><li>• ACS system based on antiquated data management principles</li><li>• Requires complete redesign of port and security modules to accommodate Account based processing</li><li>• Current architecture will not scale to meet estimated growth demands</li></ul>



### *Snapshot Evaluation*

Option	Advantages	Disadvantages
<b>ACE Option</b>	<b>Business</b> <ul style="list-style-type: none"><li>• Complete support of Mod Act requirements</li><li>• Internal and external stakeholder involvement in development.</li><li>• Improved user tools for analytical and data management processes available</li><li>• Highest level of customer service provided</li><li>• Positions Customs to move to the next evolution of system development standards, allowing global interfaces with other countries and international entities</li><li>• Ability to merge with AES to form a single integrated import/export system</li></ul>	<b>Business</b> <ul style="list-style-type: none"><li>• Requires a culture change for both Customs and the trade</li><li>• Participation in the implementation of new automated business processes is not immediate. It is tied to the deployment of computer infrastructure.</li><li>• External stakeholders may need to expend resources to align their business processes with the new business functionality</li></ul>
	<b>Technical</b> <ul style="list-style-type: none"><li>• Internal databases linked, no redundant requests for additional data</li><li>• Provides the most modern technical platform for future system enhancements, maintenance, and future business process redesigns</li><li>• Transaction-intensive processing will run on mainframes while analytical processing will run on client/server platform</li><li>• A single, integrated Customs-wide database, removing artificial barriers to data access</li><li>• Internal and external users will have the capability to receive real-time, near-real-time and batch access to a much broader array of account information</li></ul>	<b>Technical</b> <ul style="list-style-type: none"><li>• Longer overall deployment schedule</li><li>• Additional training required for users</li><li>• Requires the development of corporate knowledge for maintenance and future system upgrades</li></ul>

In analyzing the alternatives, Customs considered three factors: delivery of business functionality, technical considerations, and cost. The chart above outlines the business and technical advantages and disadvantages. With respect to cost, the amounts to modify ACS or develop a completely new software application were initially estimated to be [Deleted for RFP](#) for ACS and [Deleted for RFP](#) for ACE. Infrastructure improvement costs were not a determining factor because Customs would have to invest in infrastructure upgrades regardless of the avenue chosen. Accordingly, the overriding factors for choosing ACE were the technical and business advantages ACE would provide to both the external and internal stakeholders.





However, given the uncertainty of adequate funding, Customs developed requirements for continued maintenance of the legacy system in addition to evaluating new alternatives. Based on the study by GartnerGroup, *An Assessment of the Automated Commercial System (ACS)*, Customs would be required to spend a minimum of Deleted for RFP to keep the system operational throughout 2007, and no Mod Act features would be implemented.

The graph below outlines a comparison of Mod Act features and the level of support they would receive in any option that included ACS versus ACE.

**ACE Functional Improvements**

Core Functionality	ACE	ACS
Remote Filing	●	◐
Periodic Statements	●	◐
Periodic Payments	●	◐
Reduced Data Entry	●	◐
Reconciliation	●	◑
Streamlined Automated Manifests	●	◑
National Account Management	●	◑
Streamlined Billing, Collections, Refunds, Quota/Duty Filings	●	◐

● Fully-Supported   ◑ Partially-Supported   ◐ Marginally-Supported



**5. ACE STATEMENT OF BENEFITS**



## KEY BENEFITS OF ACE

- Reduced Data Entry. ACE will significantly reduce the total data entry requirements for processing a new shipment.
- Reduced Filings. Importers and brokers will be able to reduce the time and effort required to submit filings. On-line access to ACE will also reduce the time and effort required to track the status of filings.
- Reduced Paper Handling. ACE will end the current redundant paper/electronic submission of entries/entry summaries and automate numerous paper-based processes.
- Consolidation of Operations. ACE provides the capability for the trade to submit filings electronically from anywhere in the country.
- Reduced Financial Processing Costs. ACE will consolidate individual payments and credits into one periodic national payment.
- Improved Account Access. Through ACE the trade will have immediate, anytime/anywhere access to the status of their commercial import activity at any port throughout the United States.
- Enhanced Account Management. The trade community will have electronic access to consolidated account information to better manage their import activities, e.g., statistics on cargo examinations, filings, and liquidations.
- Just-in-time Filing. The new automated manifest capabilities in ACE will allow importers, brokers, and carriers to file cargo release documents within 15 minutes of the arrival of a shipment at Customs.
- Uniform Procedures. ACE will ensure standardization of inspection procedures from port to port.

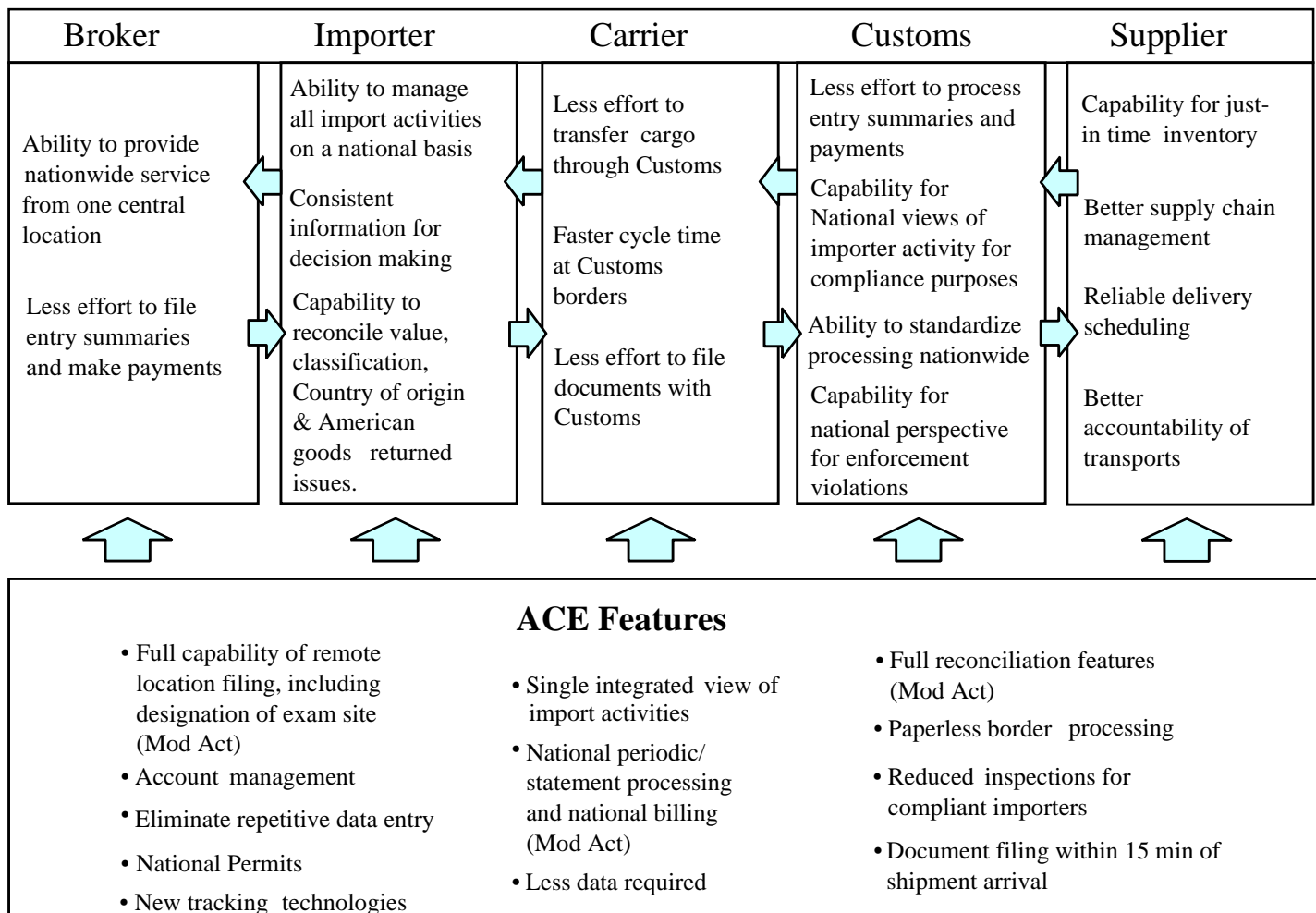
ACE is designed to leverage information technology breakthroughs and accommodate re-engineered business processes to meet increasing demands for international trade-related services and information. The functional capabilities of ACE are expected to lower processing costs and generate significant savings for importers, brokers and carriers. For example, one ACE prototype participant calculated that one of the ACE capabilities (national, periodic payment and statement) will result in a 30% reduction in the cost of money. In addition, the information flow of ACE will eliminate redundant data collection, reduce filing time, and reduce the amount of effort currently required to track and adjust transaction-based activities. These features (plus on-line access to cargo and filing status reports) enhance account management, just-in-time filing, and



uniform processing at all ports of entry and are expected to dramatically increase customer satisfaction.

ACE supports the introduction of account-based import processing to the trade community. The current importing process requires the trade community to account for each shipment as a separate transaction. Strategic use of information management allows the trade and Customs the use of ACE to facilitate processing and analysis of individual entry activities in the aggregate rather than on a transaction by transaction basis. This fundamental shift in processing features a single account number for each trade party that can be used to record business relationships among trade parties and aggregate transactions by account.

Advancements in information management and account-based processes provide some unique and shared opportunities for the trade. The benefits of information management and its enhancement of account-based processing are shared by importers, brokers, and carriers. The following chart displays an interpretation of how the benefits are expected to impact various trade entities.





## **6. ACE TECHNICAL APPROACH**



Customs is developing ACE as the future international trade information system of choice for ensuring trade compliance and providing service and information to the trade community. ACE leverages information technology advancements and integrates them with re-engineered operational processes to meet increasing demands for international trade-related services and information.

ACE represents a hybrid of the current mainframe architecture and a distributed computing environment, which employs client/server technologies, including the use of private networks and UNIX Servers. Secured web-enabled technologies will be evaluated and deployed as they become available.

Technical benefits gained from leveraging mainframe and distributed networking include:

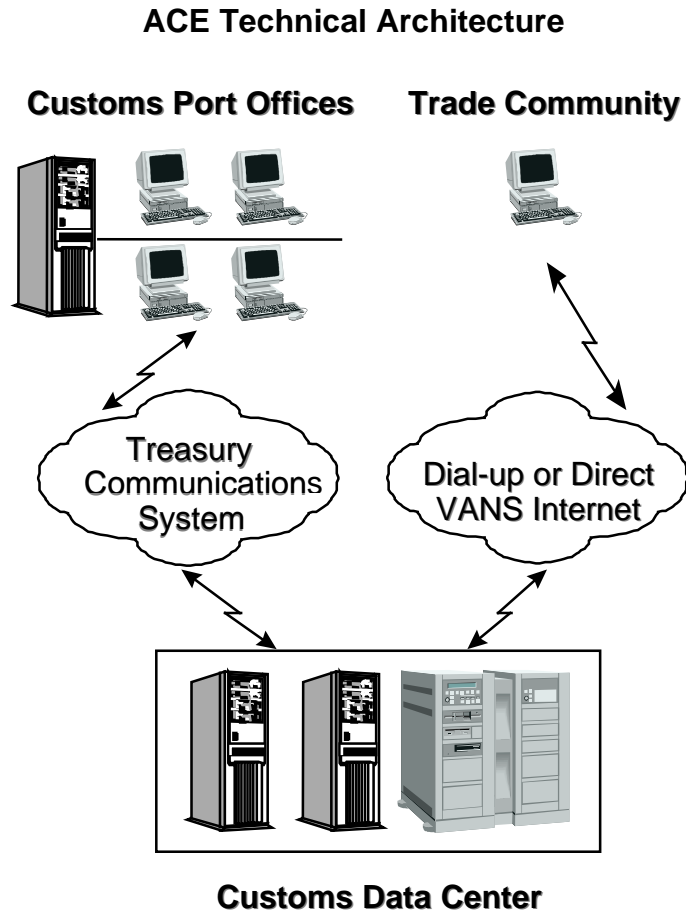
- Mission critical transaction-intensive processing will run on an IBM compatible mainframe capable of supporting high volume/high speed processing.
- Distributed servers with readily accessible data will provide both strategic and tactical analytical processing for the appropriate users, thus removing the drain of resources from the transaction-intensive processing performed on the mainframe.
- A communications network design that utilizes a common external interface which supports the transmission of trade transactions and notifications via electronic messages. Automated requests for additional data will also be supported.
- A single, integrated Customs-wide database, removing artificial barriers to data access and the need to enter and store data multiple times.
- Internal and external users will have the capability to receive real-time, near-real-time, and batch access to a much broader array of account information

The technology behind ACE is based on a proven architectural design that has been widely adopted throughout private industry. Mission critical transaction-intensive processes will run on an IBM compatible mainframe, capable of supporting high speed/high volume processing. Customs will leverage the processing capabilities of its existing data center in Newington, Virginia.

ACE will use telecommunications carriers to deliver state-of-the-art communications services. This network will support multiple protocols and provide a secure communication vehicle for transmitting confidential trade information from individual ports to central Customs databases for account processing. At some point in the future (after security, reliability, and performance issues have been addressed) the Internet will be leveraged to provide a more cost-effective solution for the exchange of information. In the interim, Customs is aware that it must protect the integrity of company trade information. The use of the existing Treasury Communications System will minimize the risk of any confidential trade data being compromised.



Customs users will be able to perform Customs clearance transaction processing, compliance analysis, reporting, and E-mail from one terminal. Distributed servers with readily accessible data will provide both strategic and tactical analytical processing for the appropriate users. Local port offices will use industry-standard desktop PCs with a Windows graphical user interface that integrates with ACE. A diagram of the ACE technical architecture is shown below.



Approximately 2,000 members of the trading communities are expected to access ACE through a variety of means, including dial-up lines, dedicated lines, Value Added Networks (VANSs), and the Internet. Internet access is potentially one of the more attractive long-term communication linkages for low-volume traders. However, until fundamental Internet security, reliability, and performance issues are resolved by the industry, Customs will not support the transmission of trade data across the Internet. Currently most low volume external customers are expected to use dial-up lines while, high-volume members of the trade will use VANSs or dedicated lines.

A key advantage of the ACE communications network design is the common external interface capable of supporting the transmission of trade transactions, notifications, and requests for



additional data via electronic messaging. The common external interface will be capable of interfacing to multiple data transport layers with the ability to route messages to ACE as well as ACS. Importers, brokers and carriers will utilize EDIFACT standard message sets and will be able to choose from a number of communication options including, dedicated lines, dial-up lines, and VANS. The trade community will be expected to pay for their own onsite telecommunications equipment and tail circuits connecting their sites to the Customs data center.

Customs will maintain a transition period for accepting trade transactions via either the ACS or the ACE interface. This transition period will provided the trade with sufficient time to modify its existing systems to work with the new interface. Another essential driver for converting to the ACE system interface over time is that this linkage will provide real-time, near-real-time and batch access to a much broader array of account information. Expanding the access to information will be an important feature for importers, brokers and carriers. It will allow them to provide enhanced account management service to their own customer base. Keeping this transition as seamless as possible will be the result of Customs working closely with the trade community.



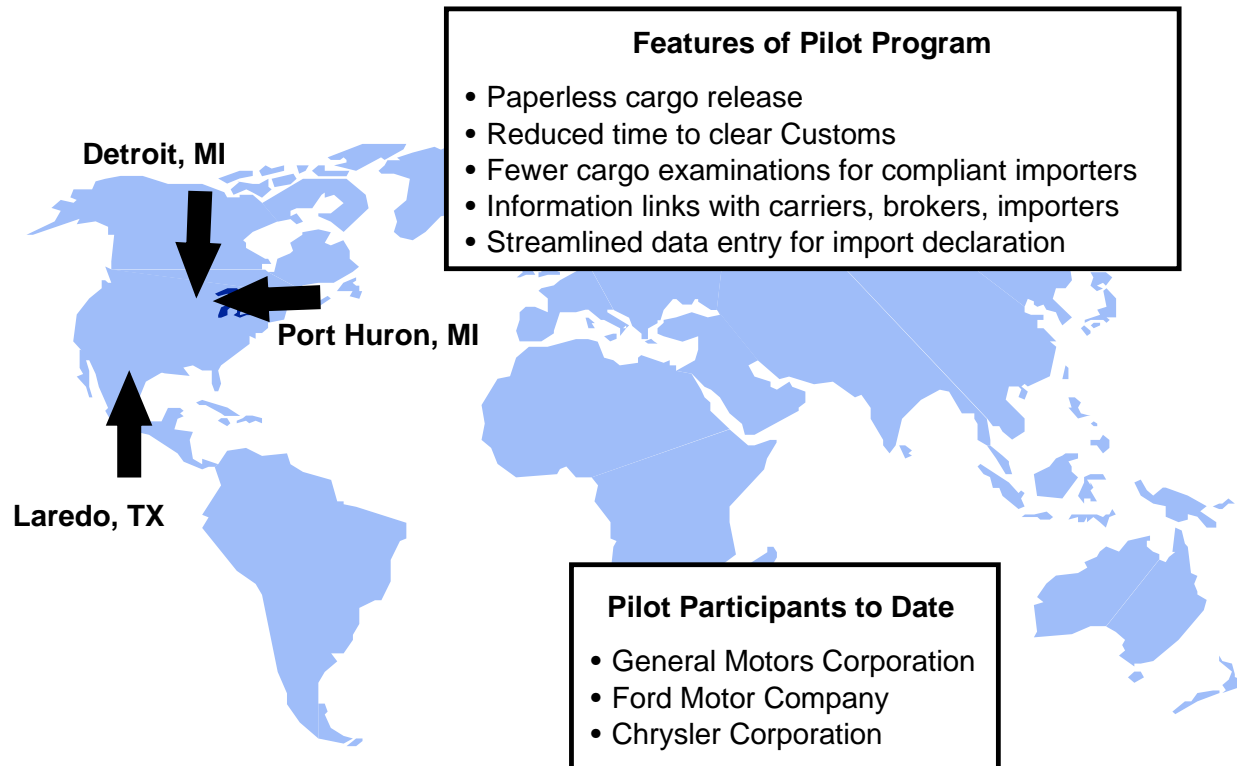


## **7. IMPLEMENTATION AND DEPLOYMENT**



## The NCAP Prototype

### **ACE Pilot Program** *NCAP Prototype*



On May 4, 1998, the first release of ACE occurred in the ports of Laredo, Detroit, and Port Huron. Known as the National Customs Automation Prototype (NCAP/P), this release successfully demonstrated an ACE-supported, redesigned trade compliance business process. GM, Ford, and Chrysler, the three prototype participants, have received release of cargo using a fully electronic process requiring minimal data elements since its inception. As of October, 1998, these participants are clearing approximately 1,087 truck shipments per month via NCAP. The other prototype participant, Robert Bosch Corp, will soon be adding to that volume.

The second release of NCAP/P, encompassing cargo release plus a fully electronic examination process, was implemented in the three original prototype ports on October 10, 1998. In addition, the Customs Trade Compliance Board of Directors has decided to expand the NCAP prototype to include additional participants and port locations. Accordingly, NCAP will be implemented in the ports of Buffalo, Calexico, El Paso, Nogalas, and Otay Mesa in fiscal year 1999. A revised Federal Register Notice was posted on August 21, 1998, soliciting more participants from the trade community.



The third and fourth releases of NCAP/P, comprising periodic payment and summary review, and reconciliation and violation billing, respectively, are scheduled for implementation in 1999.

## **Functional Deployment**

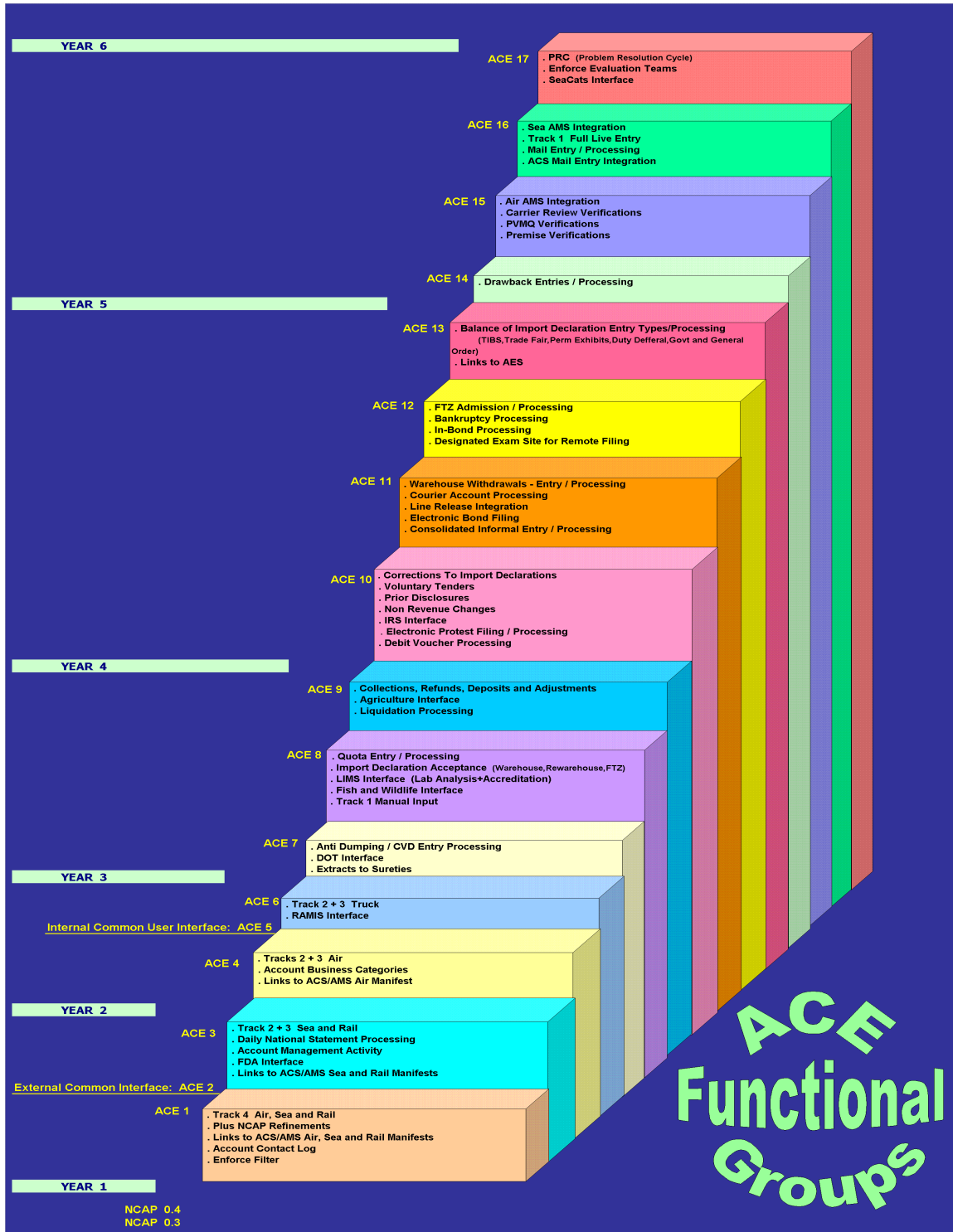
The capabilities of ACE are represented by 17 functional groups. This ordering and the roll-out of functionality to the ports is determined through a series of analytical exercises: sequencing, sizing and scheduling, and location deployment. Specific methodologies relating to each of these exercises are outlined in the sections below. Each functional group, or combination of groups, is first placed in a development sequence. Functionality deployment occurs in a series of operational releases whose dates are determined at the conclusion of a sizing and scheduling exercise. Once the results of the sequencing, sizing and scheduling exercises are known, Customs develops a plan to phase in ACE deployment at port locations.

A review of the functionality cascade is conducted annually to ensure its continued viability in terms of a logical development path, to accurately project progress given known funding and staffing levels and to accommodate newly identified or major changes in business and systems requirements. Stakeholders are given the opportunity to provide input on the sequencing and deployment through the Trade Support Network conferences. Once the annual review is complete, the functionality sequence, schedule and deployment plan is presented to the Customs Trade Compliance Board of Directors for approval.

The functionality chart displayed on the next page represents Customs estimate of when various releases would occur. The schedule and functional content of each year is heavily influenced by the sufficiency and reliability of funding.



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ACE Business Plan  
Implementation and Deployment





## **Sequencing Methodology**

Sequencing refers to the order in which major automated functionality will be designed and developed. Sequencing is determined through an analysis of the legal, operational, and automated environment within which Customs and the Trade currently operate. Once the analysis is completed, a set of criteria and assumptions are developed which then influence the logical sequencing of major activity development. An annual review of the sequencing is conducted by key Customs personnel with the assistance of an IT expert contracted to facilitate group discussion.

Primary drivers influencing the sequencing of the initial functionality deployment schedule include: the planned deployment of infrastructure; visibility/penetration of functionality both to the Trade and to Customs; the potential for increasing trade participation in the automation of the import process; the potential for migrating large volumes of transactions to the new process; a logical design approach for phasing in functionality; and, NAFTA, Mod Act, Chief Financial Officers Act (CFO) and other legislative requirements.

As Customs deploys each ACE prototype release, the agency draws on lessons learned from these releases to determine the viability of the current functionality sequencing. Additional considerations identified by Customs and the Trade through recent experience include: an immediate need to have only one system of record for entry record and financial statement purposes and external influences such as progress with the International Trade Prototype.

## **Sizing and Scheduling Methodology**

Sizing and scheduling refers to estimating the scope of business and system functionality for a given ACE application and the amount of associated effort (staff months) and schedule (calendar months) needed to develop the application considering anticipated funding and staffing levels.

Key project personnel with areas of expertise encompassing: requirement identification and analysis; software design and development; acceptance testing; and training and implementation employ a group decision making technique where ACE/ACS subject matter experts estimate the efforts required to perform major activities. An outside expert with specialized IT development experience is contracted to facilitate the discussion. Subject matter experts' knowledge is extracted and summarized through an iterative consensus building process to arrive at estimates for each ACE functional group, and then aggregated to provide total staff months and corresponding schedules.

ACE functional group sizes are estimated by identifying business and system features as a percentage of the size of a similar feature of the existing ACS system, and/or the existing (or under development) NCAP/P releases. Measures are assigned to specific features based on business and system complexity. These sizings are based on completed and current project development actuals/metrics or extrapolated by a relative order of magnitude. Whenever



available information is determined to be more accurate than model derivations, these measurements will override corresponding model projections.

Project development is a process of gradual refinement. Sizings and schedules will be recalibrated as ACE releases become operational with additional metrics assimilated, with the emergence of new business and system requirements, and to take advantage of emerging technological opportunities.

### Location Deployment Methodology

Location deployment refers to the order in which ACE will be deployed at the ports. The ordering is determined through an analysis of the results of the sequencing and sizing and scheduling exercises. In general, the phased deployment of ACE at port locations is a logical outgrowth of the functionality roll-out and the potential for migrating large volumes of transactions to the new process.

Primary drivers influencing the timing of deployment at port locations include: the use of prototype ports which will be used as initial implementation sites; the timeframe for the functionality rollout; the volume of commercial transactions at the ports; the potential for increasing trade participation in the automation of import processes; a logical approach for aligning functionality with port profiles, and NAFTA and other legislative requirements. Detailed below is the current location deployment schedule.

NCAP/P - ACE Deployment FY1998		
Service Port	Ports	
Detroit	Detroit	Port Huron
Laredo	Laredo	

NCAP/P - ACE Deployment FY1999		
Service Port	Ports	
Detroit	Detroit	Port Huron
Laredo	Laredo	
Buffalo	Buffalo	
Nogales	Nogales	
El Paso	El Paso	
Otay Mesa	Otay Mesa	Calexico

ACE Deployment FY2000		
Service Port	Ports	
Detroit	Sault Ste. Marie	Battle Creek
	Grand Rapids	Saginaw/Bay City/Flint
Laredo	Eagle Pass	Progreso



**U. S. CUSTOMS SERVICE**  
ACE Business Plan  
Implementation and Deployment

	Rio Grand City	San Antonio
	Del Rio	Roma
	Hidalgo	Brownsville
	Austin	
Buffalo	Buffalo	Rochester
	Syracuse	TNT Skypak
Nogales	Nogales	Phoenix
	San Luis	Douglas
	Naco	Sasabe
	Lukeville	Tucson
El Paso	El Paso	Santa Teresa
	Presidio	Albuquerque
	Columbus	
Champlain	Champlain	Albany
	Massena	Trout River
	Alexandria Bay	Ogdensburg
San Diego	San Diego	Otay Mesa Station
	Tecate	Calexico
	Otay Mesa	
Philadelphia	Philadelphia	Philadelphia International Aripport
	Chester	Chester/Wilmington
	Lehigh Valley	Harrisburg
	Pittsburgh	Wilkes Barre/Scranton
	UPS Courier (Philadelphia)	
Seattle	Seattle	SEATAC Airport
	Spokane	Grant County Airport
	Tacoma	Anacortes
	Everett	Port Angeles
	Aberdeen	Yakima Airport
	Olympia	Bellingham
	Friday Harbor	Port Townsend
	UPS SEATAC	Airport Inspection Branch
	Port of Avion Brokers (SEATAC)	DHL Worldwide Express (SEATAC)
	Airborne Worldwide Express (SEATAC)	
Baltimore	Baltimore	BWI Airport
New York/Newark	New York/Newark	Perth Amboy
	New York	Federal Express ECCF
	UPS (Newark)	
JFK Airport	JFK Airport	NY ACC
	Emery Worldwide	TNT Skypak (JFK)
	DHL Airways	Swissair (Skyracer)
	Federal Express (JFK)	Air France (Mach Plus)
	Dworkin/Cosell Courier	Alitalia (ALiExpress)

**ACE Deployment FY2001**

Service Port	Ports
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**U. S. CUSTOMS SERVICE**  
ACE Business Plan  
Implementation and Deployment

Blaine	Blaine	Oroville
	Ferry	Laurier
	Nighthawk	Lynden
	Sumas	Danville
	Frontier	Metaline Falls
	Point Roberts	
Los Angeles	Los Angeles	LAX Airport
	Las Vegas	Virgin Atlantic Cargo
	Port Hueneme	Gateway Freight Service
	Ontario Airport	UPS (Ontario)
	DHL (LAX)	Ogden-Allied
San Francisco	San Francisco	San Francisco International Airport
	Fresno	Salt Lake City
	San Jose International Airport	Aircargo Handling Service
	Reno	TNT Skypak (SFO)
	DHL Worldwide Express	FEDEX Courier Hub Facility
Chicago	Chicago	Des Moines
	Greater Rockford Airport	O'Hare International Airport
	Rockford Airport	Omaha
	Davenport/Rock Island/Moline	Peoria
New Orleans	New Orleans	Little Rock
	Memphis	Chattanooga
	Vicksburg	Lake Charles
	Tri-City Airport	Morgan City
	Baton Rouge	Nashville
	FEDEX Courier (Memphis)	Shreveport
	Gramercy	Knoxville
Houston	Houston	Galveston
	Sabine	Corpus Christi
	Freeport	Port Lavaca
	Houston Intercontinental Airport	
San Juan	San Juan	San Juan International Airport
	Aguadilla	Fajardo
	Ponce	Mayaguez
Cleveland	Cleveland	Columbus
	Dayton	Erie
	Emery Courier	Baer Field Airport
	Blue Grass Airport	Toledo/Sandusky
	Owensboro/Evansville	DHL Courier
	Indianapolis	Louisville
	UPS Courier	Burlington Air Express
	Airborne Air Park	Rickenbacker Airport
	Federal Express Hub (Indianapolis)	Ashtabula/Conneaut
	Cincinnati/Lawrenceburg	
Anchorage	Anchorage	Ketchikan
	Alcan	Fairbanks
	Juneau	Valdez
	Skagway	Wrangell
	Sitka	Dalton Cache





**U. S. CUSTOMS SERVICE**  
ACE Business Plan  
Implementation and Deployment

	UPS Courier Hub Facility	FEDEX Courier Hub Facility
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ACE Deployment FY2002		
Service Port	Port	
Savannah/Atlanta	Savannah	Brunswick
	Atlanta	
Miami	Miami	Fort Pierce
	West Palm Beach	UPS (Miami Int. Airport)
	Key West	Port Everglades
	Miami Int. Airport	DHL Worldwide Express
	International Courier Association	MIA/CFS Exp Consig Facility
Boston	Boston	Springfield
	Salem	Gloucester
	Hartford	New Haven
	Worcester	Logan Airport
	Lawrence	New Bedford
Charleston (SC)	Bridgeport	New London
	Charleston	Georgetown
	Greenville/Spartanburg	Columbia
Dallas/Fort Worth	Dallas/Fort Worth	Amarillo
	Midland Airport	Tulsa
	Lubbock	Oklahoma City
Norfolk	Norfolk	Richmond/Petersburg
	Newport News	Charleston (WV)
Tampa	Tampa	St. Petersburg
	Fernandina	Jacksonville
	Manatee	Orlando
	Pensacola	Panama City
	Port Canaveral	Sanford Regional Airport
Charlotte	Fort Myers Regional Airport	Sarasota Bradenton Airport
	Daytona Beach Regional Airport	Melbourne Regional Airport
	Charlotte	Durham
St. Albans	Winston-Salem	Wilmington
	Beaufort-Morehead	
	St. Albans	Richford
Duluth	Derby Line	Norton
	Burlington	Highgate Springs
	Beecher Falls	
Duluth	Duluth	Superior
	International Falls	Grand Portage

ACE Deployment FY2003		
Service Port	Port	Port
Portland (ME)	Portland (ME)	Bangor
	Portsmouth	Houlton



**U. S. CUSTOMS SERVICE**  
ACE Business Plan  
Implementation and Deployment

	Madawaska	Fort Fairfield
	Bridgewater	Eastport
	Jackman	Bar Harbor
	Belfast	Van Buren
	Fort Kent	Limestone
	Calais	Vanceboro
Pembina	Pembina	Ambrose
	Baudette	Dunseith
	Hannah	Maida
	Noonan	Noyes
	Roseau	Sherwood
	Walhalla	Westhope
	Portal	Antler
	Carbury	Fortuna
	Hansboro	Neché
	Northgate	Pinecreek
	Sarles	St. John
	Warroad	Hector Airport (Fargo)
Great Falls	Great Falls	Del Bonita
	Sweetgrass	Morgan
	Piegan	Rooseville
	Butte	Raymond
	Whitetail	Eastport
	Opheim	Porthill
	Scobey	Turner
	Whitlash	
Washington D.C.	Washington (Dulles)	Alexandria
Charlotte Amalie	Charlotte Amalie	Christiansted
Milwaukee	Milwaukee	Green Bay
	Racine	
St. Louis	St. Louis	Wichita
	Kansas City	Springfield
Minneapolis	Minneapolis	
Mobile	Mobile	Pascagoula
	Gulfport	Huntsville
	Birmingham	
Honolulu	Honolulu	Hilo
	Kahului	Honolulu International Airport
	Nawiliwili-Port Allen	
Denver	Denver	Natrona County International Airport
Portland (OR)	Portland (OR)	Longview
	Astoria	Portland International Airport
	Boise	Coos Bay
	Rogue Valley-Medford Airport	
Providence	Providence	



**U. S. CUSTOMS SERVICE**  
ACE Business Plan  
Implementation and Deployment

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<p><b>8. Cost</b></p>
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**Automated Commercial Environment  
10 Year Life Cycle**

	7-Year Developmental Period Subtotal	3-Year Additional Operational Period Subtotal	10-Year Grand Total
<b>Non-Recurring (One Time costs) Implementation</b>			
Software Development	Deleted for RFP	Deleted for RFP	Deleted for RFP
TAP Software Development	Deleted for RFP	Deleted for RFP	Deleted for RFP
Communications Infrastructure	Deleted for RFP	Deleted for RFP	Deleted for RFP
Computer Infrastructure	Deleted for RFP	Deleted for RFP	Deleted for RFP
Subtotal Implementation costs	Deleted for RFP	Deleted for RFP	Deleted for RFP
<b>Recurring costs Operation</b>			
Application Software Maintenance	Deleted for RFP	Deleted for RFP	Deleted for RFP
TAP Maintenance	Deleted for RFP	Deleted for RFP	Deleted for RFP
Communications Infrastructure	Deleted for RFP	Deleted for RFP	Deleted for RFP
Computer Infrastructure	Deleted for RFP	Deleted for RFP	Deleted for RFP
Data Center Support	Deleted for RFP	Deleted for RFP	Deleted for RFP
Technical Support	Deleted for RFP	Deleted for RFP	Deleted for RFP
Subtotal Infrastructure (ACE)	Deleted for RFP	Deleted for RFP	Deleted for RFP
Estimated Grand Total**	Deleted for RFP	Deleted for RFP	Deleted for RFP

\*\*A new ACE costing exercise is underway at this time and the results were not available by the time this document was finalized. The results of the new costing exercise will be released with the next version of the ACE Business Plan.

Cost estimates for ACE are subject to change based on the factors articulated in section 7, Implementation and Deployment, and as decisions regarding the technical architecture evolve. As with any applications project, estimates of costs and benefits will become more precise as project experience grows.

The history of ACE cost estimates focuses on two key analyses. In August, 1997, a cost/benefit analysis was conducted by Cambridge Technology Partners. The cost estimates were updated in November, 1997, based on a reassessment of the size of the software development portion of ACE using newly available data from the actual NCAP effort and other considerations. The resulting estimate to develop and deploy ACE software and hardware through the seven-year ACE deployment cycle was Deleted for RFP. For system life cycle costing purposes, estimates of development and operational costs were also constructed for a 10-year period. These costs were estimated at Deleted for RFP.

In the spring of 1998, as part of the FY 2000 planning and budgeting cycle, Customs directed another analysis of cost estimates for the overall Customs infrastructure required to support **all** business applications under development. Whereas the 1997 analysis assumed a static



technology state, this analysis included some more realistic assumptions regarding the need to plan for continual replacement costs of infrastructure equipment to keep pace with changing technology. Specifically, a 3-year replacement cycle for workstations and servers was assumed, and skill-based labor rates and annual labor escalation rates (based on current Data Center and Field Support experience) were used in place of an overall average labor rate and escalation rate.

The latest cost estimate finalized in July, 1998, estimates that the total cost of ACE software and infrastructure development, deployment and maintenance over the 7-year period for ACE development and deployment is ~~Deleted for RFP~~. The estimated cost for the first three years of ACE operation after full deployment period is ~~Deleted for RFP~~, making the total ACE 10-year estimated cost ~~Deleted for RFP~~. These cost estimates, presented in the above chart, formed the basis for Customs FY 2000 budget submission to Treasury.

Based on the revised ACE functionality deployment finalized at the August, 1998, Trade Support Network conference, Customs will undertake a new cost/benefit analysis which will be completed in the March, 1999, time frame. The cost analysis portion is expected to be completed in February, 1999.

As part of the Customs IT investment management process, costs and benefits associated with ACE will be re-analyzed on an annual basis. Key factors influencing changes in estimates will include: deployment plan changes resulting from stakeholder consultation; the impact of insufficient or unreliable funding; new technology and resulting price changes; and the development of an ACE project cost history database built on experience.



## **9. VALIDATIONS**



Customs has obtained considerable independent analysis and assistance in the planning of ACE and with the overall enterprise architecture development. Several of these independent assessment and consultation projects are described below.

Cambridge Technology Partners, a leading global system design and integration firm, was engaged to assist Customs with developing an *Enterprise Information Technology Strategy*. This document detailed a plan to assist Customs in developing an agency-wide plan, otherwise known as enterprise architecture, capable of meeting acceptable technology standards and processes. ACE is a portion of this enterprise-wide architecture and constitutes the segment farthest along in terms of comprehensive business analysis and process documentation. This document has been superseded by the following document.

The Gartner Group was contracted in 1998 to develop the *Enterprise Information Systems Architecture*. The Customs Enterprise Information Systems Architecture (EISA) is an extension of the Cambridge IT Strategy referenced above. The EISA documents the detailed description of all Customs business processes, and the technology topology and standards for Customs. The EISA has already received Treasury's approval for Phase 1 and has begun development of Phase 2. This material should supercede the Cambridge IT Strategy documents.

The ACE segment was further developed by Cambridge Technology Partners into a detailed *ACE Technical Architecture*. The objective of this analysis was to determine the appropriate approach for software and physical infrastructure development. The study confirmed that the design efforts for ACE are fundamentally sound and reflect industry best practices. The ACE implementation and support cost projections outlined in this report were developed by Cambridge Technology Partners as part of that effort. The appendix volume of *ACE Technical Architecture* includes all supporting cost details for the ACE program.

An independent review of ACE design by the *Chief Information Officers' Private Sector Council* as requested by the Department of Treasury stated "that the development and implementation of ACE as presented is following industry's best practices. The project is being developed and tested in easily defined modules providing flexibility for changes to requirements. It allows for relatively quick results to be realized while providing for minimal impact on the overall mission should changes need to be made over time."

In response to questions surrounding the short-to-intermediate term viability of the legacy Customs system, *An Assessment of the Automated Commercial System (ACS)* was prepared by GartnerGroup. In its study, GartnerGroup concluded that ACS capacity to handle current import volumes would be reached in July, 1998. To mitigate risk, GartnerGroup advised that Customs will need to invest a significant amount of capital in physical infrastructure to maintain the current level of service provided by ACS. Customs has taken steps to increase the capacity of ACS until November/December, 1998. Customs must continually address the capacity issue to prevent ACS from failing to meet current service standards.





GartnerGroup also prepared an oral briefing for Customs management at the end of 1997, which reviewed the status of ACE. In this briefing, GartnerGroup identified that Customs should roll out ACE in a series of incremental steps to reduce risk and accelerate the delivery of functional benefits to the trade community. The current deployment schedule for ACE represents the recommendations of this briefing.

Klynveld Peat Marwick Goerdeler (KPMG) worked with U.S. Customs in developing a Cost Benefit Comparison (CBC). This CBC presents a comparison of defining, developing, and providing selected Mod Act business functionality using ACS instead of ACE.



## **10. PROJECT ADMINISTRATION**



This section provides an overview of various aspects of ACE program administration. Outlined below is information regarding project oversight, team structure, contract management and evaluation.

## Oversight

The oversight structure is composed of the following:

- Treasury CIO/Investment Review Board
- Customs Investment Review Board
- Trade Compliance Process Owner
- Trade Compliance Board of Directors

**Treasury:** Weekly status reports are provided to the Chief, Information Officer Staff, and monthly status reports are provided to the Investment Review Board on the progress of ACE development.

**The Customs Investment Review Board (IRB):** is composed of senior level Customs officials, chaired by the Deputy Commissioner; reviews all IT projects for investment value; determines which projects will provide the highest return on investment and authorizes funding accordingly.

**The Trade Compliance Process Owner:** chairs the Trade Compliance Redesign Board of Directors; provides overall direction to the Trade Compliance Redesign project by:

- Providing policy direction to the project and setting priorities
- Ensuring organizational coordination
- Making resource decisions regarding Redesign initiatives
- Coordinating the representation of the project to external entities
- Communicating Trade Compliance Redesign direction to Customs employees
- Surfacing Customs policy issues to the EIT for resolution
- Communicating policy direction to the TC/ACE Executive Director

**The Trade Compliance Board of Directors:** serves as an advisory board to the Trade Compliance Process Owner, providing policy guidance related to the Trade Compliance Redesign; resolves policy issues. Board members are individually responsible for coordinating Trade Compliance Redesign issues within their respective offices to ensure organizational buy-in. The Board meets monthly.

## Team Structure

**The Executive Director:** provides day-to-day direction to the Redesign Project Team based on policy direction from the process owner, board of directors and sub-board. The Executive



Director is responsible for ensuring the successful planning, development, testing, fielding, and implementation of ACE. The Executive Director:

- Executes de facto line authority over members of the Redesign Project Staff through the assignment of tasks and resources;
- Surfaces policy and cross-organizational resource issues to the process owner or sub-board, as appropriate, for resolution;
- Establishes periods for completion of tasks.

**Redesign Project Staff:** originated as a result of a merger of the former Trade Compliance Process Management Teams (PMTs) and the ACE Development Team, and has since been augmented by staff from other organizational units. Members of the project staff retain their organizational affiliations, but report to their respective team leads for day-to-day assignments and project direction. The redesign project staff is divided into three teams whose leads report to the Executive Director:

- The Process Analysis and Requirements Team (PART): researches and resolves policy and legal issues, re-engineers business processes, and identifies and analyzes user requirements. Comprised of technical analysts and Customs business process experts, PART derives a user needs assessment and scope for each release based on a strategic and business process engineering analysis. Detailed user requirements supporting Trade Compliance strategic goals are then established. After these have been identified, functional requirements and supporting documentation are developed utilizing Use Case diagrams, analysis scenarios, work flows, business object models, event schema diagrams and narratives. This documentation provides the functional scope and requirements necessary for design, development, testing, and training.

In addition to its core Office of Field Operations and Information & Technology staff, PART consists of an extended circle of representatives from other Customs offices. These include: Office of Strategic Trade, Office of Finance, Office of Investigations, and Internal Affairs.

- The Technical Team: develops system functional requirements, designs supporting information architecture, programs the system, and develops testing/acceptance of ACE. The team relies heavily on contract support with government oversight. The functional requirements team receives the user requirements output from PART and then develops the programming specifications used to build the system. Based on these requirements, the analysts architect the system to fit into the Customs Enterprise Architecture.

The entire process includes the actual design, all associated documentation (including SDLC), programming, testing, and acceptance plans. An Independent Validation and Verification (IV&V) team monitors the Technical Team effort and reports the findings directly to the *Contracting Officer Technical Representative* (COTR), who is also the Technical Support Team Director. The COTR is responsible for managing the ACE development



appropriations, and reporting the status to Treasury on a weekly basis and to Congress quarterly.

- The Trade and Field Support Team: is a multi-faceted team comprising operational and field personnel from all major functional offices within Customs. This team supports all three deployment stages of the redesign, conducting a variety of planning, training, outreach and other activities in support of Customs field and headquarters personnel, the trade, and other government agencies before, during, and after implementation.

Internally, the team conducts site readiness checks, verifying that the necessary hardware and software are available at each port prior to implementation. Orientation sessions are conducted with port personnel to acquaint new users with redesign objectives and new operational procedures. Training materials such as user guides, computer based training aids, and standard operating procedures are developed and provided.

For the external community, the team holds outreach briefings and provides materials to the trade community regarding ACE. In addition, quarterly trade support network conferences are held to provide a forum for concerns or general project updates, and regular meetings are held with companies participating in NCAP/P to discuss prototype implementation issues. Technical assistance for external users is provided by Client Representatives for all Customs automated systems.

Finally, the team establishes post-implementation feedback mechanisms for the trade and the ports to address operational and system issues and concerns.

**The Project Planning Group:** is responsible for scheduling the preparation of requirements, software development, implementation and deployment efforts. The group prepares the project plan for the entire ACE effort, is responsible for periodic progress reports, prepares documentation required and participates in the oversight meetings and reviews. They work in conjunction with the Contract and Budget Administration Staff on the Technical Support Team, which is responsible for initiating all acquisition activities and for budget planning, control, and reporting.

## Contract Management

To develop and deploy a modernized commercial system and supporting infrastructure, U.S. Customs has developed an acquisition strategy and contract management plan. ACE will be developed using a combination of fixed-price contracts and performance-based contracts. This strategy will enable Customs to employ the best development methodologies and processes from



the private sector. Furthermore, liability for delivery will be placed on vendors rather than on the government.

The approach for infrastructure deployment will also shift responsibility for delivery to the private sector. Customs will evaluate infrastructure using a “total cost of ownership” approach. This type of approach could result in seat management for desktop computing and outsourcing of LAN services and acquisition of network services from primary telecommunications carriers.

## **Evaluation**

The Office of Information and Technology Program Management Staff is responsible for evaluation of the NCAP/ACE Project. The evaluations will encompass reviews of both compliance with Systems Development Life Cycles (SDLC) and each ACE functional group release. A formal report of each evaluation will be produced and submitted for senior management review. After development and implementation at the test sites and a period of at least 90 days of operation, a successful release may be deemed ready for further deployment.



## **11. STAKEHOLDER INVOLVEMENT**



To ensure full participation in the Trade Compliance Redesign effort, Customs has developed an extensive outreach strategy to involve the trade community, internal users, and other government agencies in the ACE development process.

**Customer Needs Analysis:** More than 170 importers, brokers, carriers, law firms, trade associations and others participated in “needs gathering” exercises (structured group interviews, one-on-one interviews, questionnaires, and bench marking) with Customs. This trade community input into the redesign has played a fundamental role in shaping ACE, the overall importing process and the development of such programs as account management, reconciliation and periodic statement filing. In addition, hundreds of Customs employees and several other government agencies were canvassed regarding their needs.

**Trade Support Network:** A Trade Support Network (TSN) was established in 1994 to provide a forum for the discussion of significant redesign efforts. The members of the TSN represent the entire breadth of the trade community, including trade associations, importers, brokers, carriers, sureties and others. Because Customs is entering a phase of ACE development where timely, focused input from the trade is critical, Customs has established a TSN subcommittee structure through which Customs hopes to receive information relating to specific topical areas. While the subcommittee topic areas are fluid based on the stage of ACE development, the current proposed subcommittee topic areas are:

- ACS/ACE Migration Strategy
- Account Data Management
- Reconciliation
- Statement/Revenue Process in Track 4 Environment
- Mode of Transportation: Truck
- Mode of Transportation: Rail
- Mode of Transportation: Air
- Mode of Transportation: Ocean
- Declaration Management/Other Government Agency

The general purpose of each subcommittee is to identify legal, procedural or systems issues and priorities specific to the topic area and to discuss the development of user and functional requirements where appropriate.

Plenary TSN conferences are being held quarterly with TSN members to solicit input on various redesign activities and to receive reports from the various subcommittees. Each TSN subcommittee determines the frequency with which the membership will convene to meet its needs, but will likely meet more frequently than quarterly.

**Field Support Network:** A Field Support Network was similarly established for Customs field personnel. Approximately 100 employees (inspectors, entry specialists, import specialists,





agents, etc) representing numerous field locations were solicited for ideas on the future of Customs automated systems and business processes.

**Other Government Agency Partnerships:** Other government agencies have been consulted regarding the redesign effort. The Bureau of the Census, the agency most engaged in the current prototypes, has provided a permanent detailee to the Process Analysis and Requirements Team and participates regularly in working sessions with Customs and the trade.

**Automation Prototypes:** Members of the trade who participate in automation prototypes have found themselves immersed in joint design activities. For example, the participants in the NCAP Prototype (Chrysler, Ford, General Motors, and Robert Bosch) have met with Customs on a monthly basis since early 1996 to address process design issues. Intensive joint working sessions, involving field users, other government agencies and the trade community, have been held on the design of entry and account processing for the NCAP Prototype.

**Outreach and Communication:** Customs continuously communicates the status of and solicits input on Trade Compliance Redesign and ACE Development efforts through:

- A dedicated section on the Customs Internet website;
- Federal Register and Customs Bulletin Board notices;
- Participation in conferences, trade fairs and other public forums.



## **12. CONCLUSIONS**



In the fiercely competitive global trade community of today, the automated processing of import data is essential to the economic survival and prosperity of the United States. Goods and their related data must move quickly in the contemporary environment of express deliveries, just-in-time inventories, and intense business rivalry. The longer we delay in implementing modern and dependable technology to manage our import data, the greater the threat to our commercial viability in international markets.

The overall goal of ACE is to implement the necessary automation support for the redesigned Trade Compliance process. We invite all interested parties to become our partners in supporting the further development and deployment of a state-of-the-art automation system—ACE—which we are confident will meet and triumph over the Nation's commercial challenges in the 21<sup>st</sup> century.



## **13. GLOSSARY**



### Account

Any entity in whom United States Customs Service (USCS) has an interest relating to Trade Compliance.

### Account-Based Processing

Verification activities that relate to an account's systems or issues that span multiple import transactions (e.g., compliance assessments, audits, premises visits, or data reviews on groups of declaration lines).

### Account Manager

USCS employee responsible for managing an Account, monitoring the Account's performance relating to Trade Compliance, and serving as the primary point of contact for the Account.

### Account Performance

Measurement of account compliance rates recorded and tracked based on individual issues—not on the total of all unique issues. Accounts will have compliance ratings for specific areas of importance to USCS (by issue). In other words, an account will have separate compliance rates for marking, classification, valuation, Other Government Agencies (OGA), etc., which will be based on verification findings such as compliance measurement results.

### Account Perspective

Universal view of an Account's activities nationwide rather than by one port at a time; ability to view a national history of transactions and performance in order to get a complete picture of the Account's performance relating to Trade Compliance.

### Account-Specific Outreach

Method used to present information (formally or informally) to an Account that applies directly to that Account's expressed needs or discovered compliance issues.

### Account Stratification

Review of Account activity data using stratification criteria to determine the level of resources USCS should assign. Also used as a structured methodology for assigning Account Managers and port account teams.



### Automated Clearing House (ACH)

Electronic method of submitting/transmitting payment and/or multiple payments with one payment transmission; combines elements of bank lock box arrangements with electronic funds transfer and replaces the issuance of individual check and cash payments.

### Broker

Person who is licensed to transact USCS business on behalf of others.

### Cargo Examination

Physical inspection of imported merchandise, the containers that hold this merchandise, and in some instances, the importing conveyance.

### Carrier Review

Post-audit activity in which a carrier's records are reviewed to ensure proper accounting and disposition of merchandise.

### Compliance Assessment

Review of an account's compliance with USCS laws and regulations through limited tests on value, quantity, classification, trade agreements, ADD-CVD and record keeping compliance. Problems identified during a compliance assessment may lead to a full audit.

### Compliance Measurement

Statistical methodology composed of sampling techniques used to determine levels of compliance with U.S. and USCS laws and regulations measurable at ports of entry. Compliance Measurements may occur at the industry or commodity level, or may be tailored for a specific account or specific trade issue.

### Compliance Profile

Assessment of objective and relative compliance, based on comparisons of an account's activity and performance with other similar accounts and with objective Trade Compliance standards. A profile will be established to potentially support assessment and reporting of compliance, to produce results.

### Consolidate and Analyze Data



First step in establishing an account with USCS. The agency must first consolidate all existing data for a given account (if available) and then analyze the data to remove duplication and invalid items. This work will be done in both automated and manual environments by the ACE system and by employees who are managing Accounts.

#### Consolidated Targeting Platform (CTP)

Single platform where Cargo, Data Reviews, and Physical Verification of Manifest Quantities (PVMQ), etc. targeting is performed. The system will perform both "up front" (pre-release) and "back end" (post-release) targeting.

#### Contact Log

A record of communications with, or about, a specific account including conversations, correspondence, meetings, etc.

#### Data Analysis

Process where an individual can select an appropriate research tool to determine availability of data, collect and analyze data, and determine form of desired result.

#### Data Review

Review of one or more declarations along with supporting documentation (invoices, etc.) and information (such as cargo examination or laboratory results) to determine the appropriate classification and value of imported merchandise. Data review may be transaction-based (review of an individual declaration) or account-based (review of a block of related declarations for a given account).

#### Data Warehouse

Database where importation data from ACE is summarized and stored for use by software packages such as ATS, Trend-Analysis and Analytical-Selectivity Prototype (TAP), and Strategic and Tactical Analysis and Research (STAR). These software packages present grouped and summarized data in a number of formats for analysis by USCS officials.

#### Declaration Correction Action

Action taken by USCS to correct declaration data directly or require filer correction via rejection.

#### Drawback



Refund or remission, in whole or in part, of a customs duty, internal revenue tax, or fee lawfully assessed or collected because of a particular use made of the merchandise on which the duty, tax or fee was lawfully assessed or collected.

### Enforce Evaluation

Review focusing on the incident of non-compliance or potential violation discovered, and extent and impact of the overall non-compliance/potential violation that the referral represents. Activities of the evaluation include developing information on the nature and extent of the issue, evaluating the Enforcement Impact of the problem, and determining the appropriate USCS response to remedy the problem.

### Enforce Evaluation Team

Multi-disciplined team established to perform the Enforce Evaluation of Level 1, 2, and 3 discrepant findings or assertions; composed of a pre-designated Special Agent in Charge (SAC) and Port - Trade Compliance Process Owner based on the violation or issue involved. The team concept includes participants from the necessary specialty fields including local SAC's, Trade Compliance Process Owners, Chief Counsel's Office, OR&R, International Trade Specialists/Managers, and Account Managers, or port account management team members.

### Filer

Party certifying the electronic filing of the application for immediate delivery, entry or entry summary. May be a broker or importer of record filing own entries through ABI (Automated Brokerage Interchange) without use of a broker.

### Informed Compliance Program

Concerted effort to work with the Trade to maximize compliance voluntarily; current philosophy of maximizing Trade Compliance involves Accounts, educated in their legal obligations and the consequences of their actions; use of informed compliance activities such as outreach will reserve the need for Enforced Compliance Actions for egregious, willful and serious violations.

### Issue

An issue is a need identified concerning an account, industry, or Harmonized Tariff Schedules (HTS), such as needing a base line compliance rate for the steel industry.

### Laboratory/Gauger Accreditation





On-site visit to a laboratory or gauger to determine if a company is eligible for accreditation. The visit includes interviews of company officials and review of facilities, equipment, staffing and methods to verify that the account meets USCS standards.

#### Laboratory Sample Analysis

Scientific analysis of samples related to imported or smuggled goods.

#### Liquidation

Final computation or ascertainment of the duties or drawback accruing on an entry.

#### Location Deployment

Location deployment refers to the order in which ACE will be deployed at the ports.

#### Performance Assessment

Continual evaluation of trends in an Account's performance nationwide by viewing data analyses and selected transactions.

#### Physical Verification of Manifested Quantity (PVMQ)

Measurement of the compliance of a particular arrival of a carrier by reviewing the quantities unladen with the quantities manifested.

#### Premises Visit

On-site visit to an account's premises to review procedures, documentation, and other related business practices.

#### Problem Resolution Cycle (PRC)

Business process employing a logical, methodological approach to issue analysis and targeting. The process is designed to employ automated systems to effectively identify transactions, industries, and accounts which have a high probability for non-compliance. The two major sub-processes are Issue/Assertion Management and Course of Action Management.

#### Protest



Legal process whereby an account protests or petitions an action taken by Customs, and Customs reviews these claims along with supporting documents in order to render a decision. The status/state of a protest impacts the classification of receivables.

### Redundancy Screening

Review of historical verification records as a means for avoiding referrals or supplemental actions that replicate previous activities.

### Referral Management

Automated process for controlling referrals, including acceptance/rejection of referrals and assigning work to groups/individuals.

### Resource Management

Automated ability to track resource capabilities, usage and productivity; key components include: establishment of a baseline of workload capabilities, determining activity budgets, setting priorities and providing management reports on resource utilization vis a vis priorities.

### Sequencing

Sequencing refers to the order in which major automated functionality will be designed and developed. Sequencing is determined through an analysis of the legal, operational, and automated environment within which Customs and the trade currently operate.

### Sizing and Scheduling

Sizing and scheduling refers to the exercise to estimate the scope of business and system functionality for a given ACE application and the amount of associated effort (staff months) and schedule (calendar months) needed to develop the application given anticipated funding and staffing levels.

### Statement

Consolidated report by Account of financial transactions for a given period; includes periodic financial reports USCS provides customers and USCS financial statements.

### Surety



One who has contracted to become legally liable for debts, defaults or failure of responsibility of another.

#### Track One

First option for import declaration entry. This option involves a "live entry" with presentation of all data prior to release and payment of duties is up-front. This option holds the lowest priority for entries.

#### Track Two

Second option for import declaration entry. This option involves electronic cargo selectivity and entry summary processing. The release data is used as a template for completing the import declaration data. Payment is on a local daily statement to the Account.

#### Track Three

Third option for import declaration entry. This option involves a full import declaration be submitted prior to release. Payment is made bi-monthly by electronic funds transfer.

#### Track Four

Fourth option for import declaration entry. This option involves only qualified accounts as determined by USCS. Minimal transaction data is needed prior to release and electronic payment is required for this option. The Track 4 initiative is being tested within the National Customs Automation Program (NCAP) core pilot.

#### Trade Compliance Process

Method by which USCS processes imported commercial cargo, from informed compliance outreach initiatives to when entry summary declaration documents are verified, completed and archived. It includes enforcement referrals as well. The whole process encompasses the traditional roles and activities performed by all USCS Officers.

#### Transaction-Based Processing

Verification activities conducted on individual declarations or declaration lines.

#### Trend-Analysis and Analytical-Selectivity Prototype (TAP)



Tool which consists of two primary components, a targeting component and a trend analysis component:

- Targeting Component - provides a statistical score for each entry summary line that can be used with the total value of the summary line to sort an entry summary workload. Warning flags are also generated for a variety of triggers. These triggers operate by comparing the data of a summary line against trigger tables with established relationships between specific data elements and generating flags for relationships that are not in the tables.
- Trend Analysis Component - provides trend graphs and profiles of data. Users are able to profile subjects such as HTS classification, consignee, Manufacturer's Identification (MID), filer, Anti-Dumping (AD) case number; Countervailing Duties (CVD) case number, and country of origin. Users can generate trend graphs for one or more of the above elements. For example, a user can bring up a profile of consignees for a specific HTS classification sorted in descending order by total value, select several of the top consignees and request a trend graph of all the consignees.

### Verification

Action taken to validate the compliance of accounts, detect trade violations, and interdict contraband. Types of verifications include cargo examinations, physical verifications of manifested quantities, carrier reviews, facility examinations, data reviews, premises visits, protest reviews, drawback claim reviews, audits, compliance assessments, recordkeeping compliance certifications, and laboratory sample analyses.

### Violation Billing Program

Method of remedying certain predefined types of discrepancies; Accounts with a demonstrated acceptable performance record will be issued bills for predefined types of discrepancies and for certain Level 3 "technical violations" rather than having formal administrative penalty case (liquidated damages) initiated. A typical example of a violation bill involves a late file violation. Under the program, USCS will issue a bill for [Deleted for RFP](#) plus interest rather than opening a liquidated damages case as long as the violation is considered an anomaly and not a trend. Violators that demonstrate a pattern of abuse (trend) will be excluded from the program and will face administrative penalties.



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## List of Acronyms

ABI	Automated Brokerage Interchange
ACH	Automated Clearing House
ACE	Automated Commercial Environment
ADD	Anti-Dumping
AES	Automated Export System
AMS	Automated Manifest System
ATS	Automated Targeting System
CTP	Consolidated Targeting Platform
DOT	Department of Transportation
EDI	Electronic Data Interchange
FDA	Food and Drug Administration
HTS	Harmonized Tariff Schedules
MID	Manufacturer's Identification
MOD (Act)	Modernization Act (Title VI of NAFTA)
NAFTA	North American Free Trade Agreement
NCAP	National Customs Automation Program
OGA	Other Government Agencies
PFI	Primary Focus Industry
RAMIS	Regulatory Audit Management Information System
SAC	Special Agent in Charge
TAP	Trend-Analysis and Analytical-Selectivity Prototype
USCS	United States Customs Service



**14. SUPPLEMENTAL  
INFORMATION**



A number of detailed documents are available which provide additional information about the ACE program. These documents include:

- *Enterprise Information Systems Architecture*, by GartnerGroup, 1998 and ongoing. The Customs Enterprise Information Systems Architecture (EISA) is an extension of the Cambridge IT Strategy referenced below. The EISA documents the business processes and the technology required by Customs. Treasury has approved Phase 1 of the EISA document and the GartnerGroup has started development of Phase 2. When completed this material will supercede the Cambridge IT Strategy documents.
- *Enterprise Information Technology Strategy*, by Cambridge Technology Partners, 1997. This document identifies the IT strategic direction with relation to the major business and application areas within Customs, the technology standards, and the organizational structure and skills necessary to support the business needs. ACE is represented in the documentation and constitutes the segment farthest along in terms of comprehensive business analysis and process documentation.
- *ACE Technical Architecture*, by Cambridge Technology Partners. This two-volume report outlines the implementation details for the ACE project including the physical and logical architecture of ACE, the projected deployment schedule, and detailed cost-benefit analysis calculations.
- *An Assessment of the Automated Commercial System (ACS)*, by GartnerGroup. To mitigate current risk, GartnerGroup advised that Customs will need to invest a significant amount of capital in physical infrastructure to maintain the current level of service provided by ACS. The implementation of ACE software and infrastructure components will reduce, and eventually eliminate, this recurring need for significant annual capital investment in maintaining the legacy ACS environment.

For additional information, contact the Trade Compliance Board of Directors via:

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